

## METHOD AND APPARATUS FOR PRODUCING TRACTIVE EFFORT

### ABSTRACT

**[0031]** An apparatus for producing tractive effort, the apparatus comprising: an energy source adapted for generating a high DC voltage; a motor drive adapted for generating a motor voltage from the high DC voltage; and a motor adapted for producing the tractive effort from the motor voltage, the energy source comprising: a heat engine adapted for generating mechanical power by burning a fuel; an alternator adapted for generating an alternating voltage from the mechanical power; a rectifier adapted for rectifying the alternating voltage and producing a low DC voltage; an energy battery adapted for storing and delivering energy derived from the low DC voltage; and a traction boost converter adapted for boosting the low DC voltage to produce the high DC voltage, the motor drive comprising: a power battery adapted for storing energy and delivering power at the high DC voltage; and a traction converter adapted for generating the motor voltage from the high DC voltage during motoring operation and for generating the high DC voltage from the motor voltage during braking operation.